Department of Industrial and Systems Engineering

UNIVERSITY OF WISCONSIN–MADISON

Graduate Program Handbook

Fall 2023

Welcome, new and returning graduate students!

The faculty and staff of the Department of Industrial and Systems Engineering at the University of Wisconsin-Madison are delighted that you have joined us for your graduate studies! Our department is internationally known for its expertise in human factors engineering, health systems engineering, manufacturing and production systems, and decision sciences and operations research.

Graduate school is a remarkable time in an engineer's life. Graduate school provides an opportunity for you to deepen your skills and expand your knowledge about industrial engineering, and how it can be applied to improve both industry and the broader society. You're joining a great department at a great university, and I am confident that you will find lots of opportunities for personal and professional growth here. The faculty, staff, and other students are all happy to help you learn what you want to learn!

Graduate school is a time of increasingly self-directed learning – both inside and outside the classroom. So, take advantage of your time here to meet our faculty members in person, attend our research seminars (on Friday afternoons at 12:00pm), explore work being done in other departments, and generally create a vibrant learning experience that will help you launch the next phase of your life.

Your first stop on the way should be the Graduate Student Services Center (Room 3182 of the Mechanical Engineering Building). If you occasionally manage to come up with a question for which they don't know the answer, they will at least always know how to GET the answer for you! In addition, Prof. Doug Wiegmann (Room 3214) is the associate chair of the department for graduate studies; he can assist you with any academic issues. Each graduate student also has an adviser – please make sure to introduce yourself to your advisor by the third week of the semester. Finally, as department chair, I hold regular office hours for students in my office (Room 3107). You can stop by without an appointment during office hours, or feel free to make an appointment to meet with me at some other time.

Good luck,

Laura Albert

Laura Albert
David H. Gustafson Department Chair and Professor

Department of Industrial & Systems Engineering
University of Wisconsin-Madison 3107 Mechanical Engineering Building 1513 University Ave. Madison, WI 53706-1609
(608) 262-2686 Email: ie@engr.wisc.edu http://www.engr.wisc.edu/ie/

IMPORTANT note: Some links within this document are only accessible to currently enrolled students.

Table of Contents

Faculty Directory

Oguzhan Alagoz
Professor

- **Research Interests:** Operations research, Stochastic optimization, medical decision making, completely and partially observable Markov decision processes, simulation, scheduling, health-care applications and health-technology assessment
- **Contact:** alagoz@engr.wisc.edu; (608) 890-0399

Laura Albert
David H. Gustafson Department Chair
Professor

- **Research Interests:** Modeling and solving real-world discrete optimization problems with application to homeland security, disasters, emergency response, public services and healthcare, sports analytics and bracketology
- **Contact:** laura@engr.wisc.edu, (608) 262-3002

Justin Boutilier
Assistant Professor

- **Research Interests:** Combining optimization and machine learning to improve the quality, access, and delivery of health care; drone delivery applications in health care, such as using drones to deliver defibrillators to cardiac arrest incidents
- **Contact:** jboutilier@wisc.edu

Alberto Del Pia
Associate Professor

- **Research Interests:** Theoretical and algorithmic aspects of mixed-integer optimization, with a special emphasis in linear and polynomial functions; polyhedral combinatorics and combinatorial optimization
- **Contact:** delpia@wisc.edu

John D. Lee

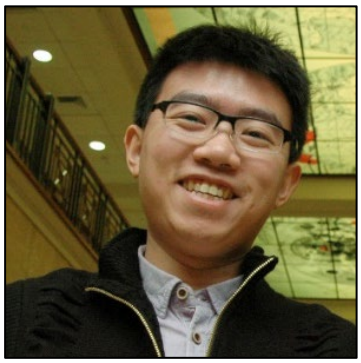
Emerson Electric Quality & Productivity Professor

- **Research Interests:** Cognitive engineering, interface design, trust in automation, human adaptation to technology, modeling human behavior
- **Contact:** jdlee@engr.wisc.edu; (608) 890-3168

Jeff Linderoth

Harvey D. Spangler Professor

- **Research Interests:** High performance and grid computing, numerical optimization: integer programming and Stochastic programming
- **Contact:** linderoth@wisc.edu, (608) 890-19310



Kaibo Liu

Associate Professor

- **Research Interests:** System informatics and data analytics for quality improvement, data fusion for process modeling, monitoring, diagnosis and prognostics, statistical learning and data mining, statistical process control
- **Contact:** kliu8@wisc.edu; (608) 890-3546

Jim Luedtke

Professor

- **Research Interests:** Stochastic optimization, especially optimization with risk constraints, mixed integer optimization (linear and nonlinear), applications of optimization
- **Contact:** jim.luedtke@wisc.edu; (608) 890-2560

Tony McDonald
Assistant Professor

- **Research Interests:** Human factors, healthcare systems, data analytics
- **Contact:** admcdonald@wisc.edu

Ranjana Mehta
Professor

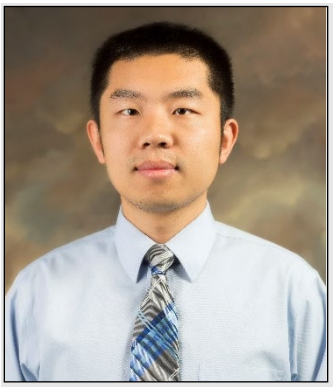
- **Research Interests:** Human factors, healthcare systems, data analytics
- **Contact:**

Carla Michini
Assistant Professor

- **Research Interests:** Polyhedral methods and algorithms for combinatorial problems
- **Contact:** carla.michini@wisc.edu

Yonatan Mintz
Assistant Professor

- **Research Interests:** Sequential decision making and reinforcement learning; precision healthcare; machine learning and statistical inference; fairness, accountability, and transparency in decision making; optimization
- **Contact:** ymintz@wisc.edu



Hantang Qin

Assistant Professor

- **Research Interests:** Advanced manufacturing, industrial artificial intelligence
- **Contact:** hqin52@wisc.edu

Robert G. Radwin

Duane H. and Dorothy M. Bluemke Professor

- **Research Interests:** Occupational ergonomics and biomechanics (Lab website)
- **Contact:** rradwin@wisc.edu; (608) 263-6596

Leyuan Shi

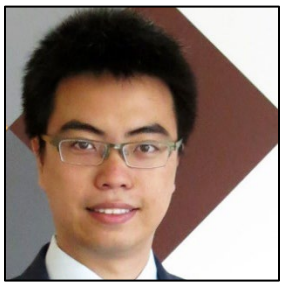
Professor

- **Research Interests:** Simulation modeling, large-scale optimization, supply chain optimization, production planning and scheduling
- **Contact:** leyuan@engr.wisc.edu; (608) 265-5969

Dharmaraj ("Raj") Veeramani

Robert Ratner Chair Professor; Executive Director of UW E-Business Consortium and UW E-Business Institute

- **Research Interests:** Industrial data analytics and intelligent decision making, data science and AI-enabled business process improvement and automation, Internet of Things (IoT), smart manufacturing and connected enterprise, supply chain management and optimization, E-business technologies and strategies
- **Contact:** raj.veeramani@wisc.edu; (608) 262-0861



Xin Wang

Assistant Professor

- **Research Interests:** Developing mathematical models and solution methods for sustainable and resilient logistics systems, interconnected system of systems, vehicle sharing, supply chain management, and traffic flow modeling and analysis; enhancing resilience of electric-vehicle-power-grid nexus, reliable biofuel supply chain design, and information sharing/management of systems
- **Contact:** xin.wang@wisc.edu; (608) 890-3913

Douglas A. Wiegmann

Associate Professor and Associate Chair of Graduate Affairs

- **Research Interests:** Cognitive systems engineering, system safety, accident investigation, human error analysis, aviation, healthcare
- **Contact:** dawiegmann@wisc.edu; (608) 890-1932

Qiaomin Xie

Assistant Professor

- **Research Interests:** Stochastic networks and reinforcement learning, with applications in computer network and e-commerce systems.
- **Contact:** qiaomin.xie@wisc.edu; (608) 262- 3804

Gabriel Zayas-Cabán

Assistant Professor

- **Research Interests:** Healthcare delivery, applied probability, and operations research
- **Contact:** zayascaban@wisc.edu; (608) 265-6761

Shiyu Zhou

Professor and Executive Director of UW Internet of Things Research Center

- **Research Interests:** Modeling and analysis of the variation propagation and other in-process sensing data in complex manufacturing processes, in-process quality and productivity improvement: diagnosis of complicated manufacturing processes using sensor fusion, feature extraction, and pattern recognition based on engineering field knowledge; fast calibration and active compensation for manufacturing systems: active real-time

Staff Directory

Dave Kantor

Department Administrator

Contact me for:

- General questions regarding the department
- ME building spaces maintenance and issues
- Hiring staff or inviting visiting scholars
- Questions about the airspeed velocity of an unladen swallow

ME 3107| (608) 263-3214 |dkantor@wisc.edu

Kelly Petersen

Main Office Manager

Contact me for:

- Conference room reservations and conference call set ups
- Keys and building access
- E-reimbursement, travel reservations, fleet rentals
- Mail
- Parking permits/validations

ME 3107| (608) 262-2686 |kmpetersen2@wisc.edu

Jane Feller

Communications Specialist

Contact me for:

- Research accomplishments and faculty awards
- Social media and website administration
- Public relations
- Alumni letters and communications
- Scholarship management

ME 3107| (608) 890-1617 |jfeller3@wisc.edu

Casandra Zimmerman

Academic Communications Specialist

Contact me for:

- Social media and website administration
- Event management/public relations
- Student accomplishments and awards
- Student organizations

ME 3107| (608) 890-1617 |cmzimmerman2@wisc.edu

Megan Cusack

Payroll & Benefits Specialist

Contact me for:

- RA/TA/PA salary and benefits
- I-9 employment verification
- Speak Test information
- Benefit advisement
- Visa processing and tracking
- Summer support hiring

ME 3107| (608) 890-3851 |musack3@wisc.edu

Cody Legreid

Accountant

Contact me for:

- Department financial policies and procedures
- E-reimbursement
- P-Card use
- Budget management
- Scholarship management

ME 3107| (608) 265-5941 |clegreid@wisc.edu

Colby Johnson

Research Administrator

Contact me for:

- Research fund administration
- Pre- and post-award management of research grants
- WISPER records
- Research proposal editing

ME 3107| (608) 265-5474 |ccjohnson24@wisc.edu

Annie Studer

Research Administrator

Contact me for:

- Research fund administration
- Pre- and post-award management of research grants
- WISPER records
- Research proposal editing

ME 3107| (608) 890-1463 |amstuder2@wisc

Pam Peterson

Graduate Student Services Coordinator

Contact me for:

- Graduate student services
- Graduate school resource and policy information
- Warrant processing
- Campus resources
- Research enrollment assistance

ME 3182| (608) 263-4025 |prpeterson@engr.wisc.edu

Sinan Tas

Advisor and Driector, Accelerated Masters Program

Accelerated/Course Program students should contact me for:

- Degree requirements
- Available Courses
- Prerequisites
- Career opportunities

ME 3107| (608) 263-0379 |tas@wisc.edu

Arriving on Campus

Housing

There are many different housing options in Madison. The key to finding a good fit is to start looking for housing early. You can start your search on the Campus Area Housing. They have updated housing listings as well as information about tenants' rights, university apartments, and finding housing in Madison. UW Rental Resource Guide

You may also want to try University Housing-Apartments and Madison Campus and Downtown Living, as they both list many campus area apartments. Almost all leases are 12 months long and start on August 15th. If you have any questions or concerns about your housing, please call the Tenant Resource Center at (608) 257-0006.

Student ID/Wiscard

All students need a Student ID card. With this card, students can check out books from any of the Campus Libraries and it can also be used as a multipurpose debit card called "Wiscard." Students' Wiscard can be used to purchase food, textbooks, and school supplies around campus.

Obtaining a Student ID/Wiscard

Newly admitted students may obtain their initial card at no cost upon verification of enrollment by the card office staff. Continuing or returning students may obtain a card to replace a lost, stolen, or worn ID as needed. Replacement cards may be subject to a fee. In order to obtain your student ID you must present some form of personal photo identification such as a valid driver's license, passport, or state ID. The Photo ID Office is located in Union South in room 149 and the hours are Monday-Friday 8:30am- 5:00pm. You can find more information at http://www.wiscard.wisc.edu/.

Bus Pass

The ASM bus pass is free (already included in your tuition and fees) and includes unlimited rides on the Madison Metro, the local bus and paratransit agency. Bus passes are available at the beginning of each semester at Student Print on the 3rd floor of the Student Activity Center, 333 East Campus Mall. If you have any questions, you can call them at (608) 262-6216. There are five campus bus routes that run frequently throughout the week, and anyone can ride these buses *without* a bus pass. Routes 80, 84 and 85 run during the daytime hours and routes 80, 81, and 82 run during nighttime hours. Routes 85 and 82 run close to the Engineering Campus. You can find a complete map of all bus routes, as well as schedules at http://www.asm.wisc.edu/bus-pass-program-faq/.

City of Madison

The city of Madison has a lot to offer its residents and visitors with hundreds of restaurants, musical events and cultural activities. The websites below will help you learn more about the city and things to do year-round.

- Visit Madison
- Madison throughout the seasons
- Isthmus
- UW-Madison Events Calendar
- Madison.com

Academics

Important Websites

Academic Calendar	http://www.secfac.wisc.edu/academic-calendar.htm
CAE (Computer Aided Eng)	http://www.cae.wisc.edu/
COE Diversity Affairs Office	https://engineering.wisc.edu/about/inclusion-equity-and-diversity/
Deadlines At a Glance	https://registrar.wisc.edu/dates/
DoIT (Division of Info Tech)	http://it.wisc.edu/
Engineering Career Services	https://engineering.wisc.edu/student-services/career-services/
Grad School Academic Guidelines	http://grad.wisc.edu/acadpolicy/
Graduate School Forms	https://grad.wisc.edu/documents/forms/
International Student Services	http://iss.wisc.edu/
ISyE Department Website	https://engineering.wisc.edu/departments/industrial-systems-engineering/
McBurney Disability Center	http://mcburney.wisc.edu/
University Health Services	http://www.uhs.wisc.edu/
Wait List Demo	https://kb.wisc.edu/page.php?id=15644
UW Libraries	https://www.library.wisc.edu/
Writing Center	http://writing.wisc.edu/

Important Dates

Each semester, you can find a copy of the Academic Calendar, as well as important deadlines (Deadlines At A Glance) through the wisc.edu homepage. The Graduate Student Services Center will email students at the beginning of each semester to remind students of the deadlines. **However, as a student, it is YOUR responsibility to be aware of and meet all deadlines**. Please see the **Academic Calendar** for more information and you can find each semester's deadlines at the Registrar's **Deadlines At A Glance.**

Student Records in Box System

All ISyE students will be given an online folder through the University of Wisconsin-Madison Box system. Students will login using their netID and password. Each student will have a folder in their Box where s/he can upload required documents as well as receive faculty approval and signatures. Students will be emailed with instructions on how to access Box within the first week of the semester.

Advising

Per Graduate School policy, every graduate student MUST have a faculty advisor. A faculty advisor provides the graduate student with academic guidance regarding their course selection and research oversight in their thesis or project. Graduate students should always seek advice from their advisor and other faculty in their interest area prior to enrolling for courses.

All ISyE graduate students are also assigned to Pam Peterson (the ISyE Graduate Services Coordinator) for additional program assistance (i.e. Graduate School policy and procedure information, campus resources and overall general program support etc...) If you have questions, please stop by her office in the CoE Graduate Services Center in 3182 ME or email her prpeterson@wisc.edu. Students please include your Campus ID # information with all communications with ISYE faculty and staff (including the Graduate Coordinator).

Faculty Advisor Selection

Many PhD students are assigned a faculty advisor when they are admitted to the program, based on a match between their research interests and those of the assigned advisor. Some PhD students are not initially matched to a faculty advisor for their research when admitted. Such students are advised by the associate chair for graduate studies in their first year. During their first year, these students explore research possibilities with different faculty in the department and choose a faculty advisor by the end of the first year.

Research option MS students are assigned a faculty advisor according to their research interests at the time they are admitted. MS students in the course-option programs are advised by the MS Course Director.

Changing Research Faculty Advisors

Changing advisors during the research option MS or PhD program may be necessary due to changes in a student's interests. To change advisors, a student should first obtain approval from their potential new advisor. The change is then implemented by the student submitting a request to change their advisor to the Graduate Coordinator. (Pam Peterson at prpeterson@wisc.edu). When you email the Graduate Coordinator, please be sure to include your previous advisor, new advisor as well as your student ID #. Students planning to change their advisor are expected to inform the current advisor of their pending departure with as much advance notice as possible. If a student's change of advisor is a result of hostile or intimidating behavior, bias, harassment, etc., from their current advisor, the Associate Chair for graduate studies will work with the student to assure their funded appointment is adequate for the student to make progress in their degree, in particular with preference for a research assistant appointment over a teaching assistant appointment.

Changing Focus Areas

Changing focus areas during the graduate program may be necessary due to changes in a student's interests. Students should understand that switching focus areas may result in the student having to take more courses to meet the requirements of their new focus area. In order to change focus areas, students need to secure a new faculty advisor within the new focus area. It is the student's responsibility to find a new advisor before they can change focus areas. Once a student has secured a faculty advisor, the student should request that the advisor email the Graduate Coordinator to confirm their willingness to advise the student. The Graduate Coordinator will then update the student's focus area and advisor. Students should start working with a new planning grid that fits their new focus area and with their faculty advisor toward completion of the program requirements.

MS Students Applying to PhD Program

Students enrolled in an MS degree program may apply to the PhD program by the following steps.

1) Students must complete an Add/Change/Discontinue Program Request with the Graduate School as well as submission of a Statement of Purpose, Current Resume, GRE Exam Scores and 3 letters of recommendation to the Graduate Coordinator for the program change/add request review.
2) An MS student's application to the PhD program is helped significantly if they have first found a faculty advisor who agrees to advise them throughout their PhD program. In this case, the faculty advisor should send an email to the Graduate Coordinator to notify them of their intent to advise the student.
3) The student file is then reviewed by the graduate admissions committee to decide on admission to the PhD program. If admitted, the student's change of degree level is approved, and the Graduate Student Coordinator will notify the Graduate School and will email confirmation to the student.
4) *****International students***** must also inform the International Student Services Office as soon as they decide to change their degree level by filling out the Change of Education Level Request in the ISS Terra Dotta system.

Withdrawing from UW-Madison

For students needing to withdraw from their graduate program in ISyE:

1) Please visit the Office of the Registrar's website for instructions for withdrawing from UW-Madison. In particular, please read the Impacts of Withdrawing section.
2) Please inform your ISyE faculty advisor and Graduate Coordinator of your plans (either by email or in person).

A student is considered enrolled at UW-Madison if, starting on the first day of that term, they are enrolled in at least one course, even if tuition has not been paid or the student has yet to attend class. If you decide not to attend UW-Madison for a term, and you have already enrolled in at least one course, you will either CANCEL your enrollment or WITHDRAW from the University depending on timing.

Class Registration and Credit Load

Registering for Independent Study (ISyE 699/999) or Research/Thesis Credits (ISyE 790/890/990)

To register for independent study or research /thesis credits students should consult with their research/ faculty advisor prior to enrollment for information on credit #'s, expectations of coursework, etc. Independent study credits (699 or 999) are graded with a letter grade (A-F) and are weighted with the student's GPA. Research credits (790, 890, 990) can only be graded as P (Progress), S (Satisfactory), U (Unsatisfactory). Research credits are not weighed into a student's GPA.

Advanced Independent Study (ISyE 699/999) – short term/ one semester project work: Graduate students should email the Graduate Coordinator (prpeterson@wisc.edu) with their campus ID# and faculty name information for permission for enrollment.

Research / Thesis Credit (IE 790 / 890 / 990) – long term / multiple ongoing research: ISyE graduate students can enroll directly through their MyUW student center under the appropriate course # pending their degree program.

Non-ISyE Graduate students should complete the Non-ISyE Graduate Students – Ind Study/Research/Thesis Course Authorization (IE 699, IE 790, IE 890, and IE 990).

Research and Independent Study Courses: Independent study credits (699 or 999) are graded with a letter grade (A-F) and are weighted with the student's GPA. Research credits (790, 890, 990) can only be graded as P (Progress), S (Satisfactory), U (Unsatisfactory). Research credits are not weighed into a student's GPA.

As a general guideline,

- MS students should register for Independent Study 699 or Master's Research 790
- PhD pre-dissertators should register for Independent Study 699 or Pre-dissertator Research 890
- PhD dissertators should register for Advanced Independent Study 999 or Dissertator Research 990

However, the student needs to discuss with his/her advisor to decide which course to register for among 699, 790, 890, or 990.

***Please review the Important Enrollment Dates and Deadlines on the Office of the Registrar's website. ***

Change of credits: If a student decides they need to change the number of credits for their research or independent study course and **the Add Deadline has *not* passed**, students can change the number of credits thru their MyUW Student Center through a Course Change Request.

Late Course Enrollment/ Late Course Change/ Late Drop
After the Add Deadline *has* passed, an appeal with the Graduate School and Registers office needs to be made. Please visit Late Enrollment Instructions for further information.

Registering for a Closed Course

If you try to enroll for a course but receive an error message, *please read the error message carefully*. If the error message indicates that the course has reached capacity, please add yourself to the course waitlist if one is available. If the error message indicates the course pre-requisites have not been met, please email the instructor for permission to enroll or the error message indicates that instructor consent is required, please email the instructor directly. For other ISyE course enrollment assistance, please email enrollment@ie.wisc.edu.

Enrollment Step by Step Tutorials

Grading

Per ISyE Policy IEP 11.1, graduate students who receive a grade of C or lower will not be allowed to use that course for their graduate program. Students must receive a BC or higher in any course they plan to use toward their graduate program.

Satisfactory Progress

Please be sure to check the Department policy for Satisfactory Academic Progress as well as the Graduate School's policies on satisfactory progress. Continuation in the Graduate School is at the discretion of a student's program, the Graduate School, and a student's faculty advisor. The Graduate School sets minimum standards that all graduate students in the university must meet. Many departments and programs have additional requirements that exceed these Graduate School minimum requirements. The definition of satisfactory progress varies by program. The Graduate Guide includes the Graduate School's minimum degree requirements and each program's minimum criteria for satisfactory progress.

The Graduate School requires that students maintain a minimum graduate GPA of 3.00 in all graduate-level work (300 or above, excluding research, audit, credit/no credit, and pass/fail courses) taken as a graduate student unless probationary admission conditions require higher grades. The Graduate School also considers Incomplete (I) grades to be unsatisfactory if they are not removed during the next fall or spring semester in which a student is enrolled; however, the instructor may impose an earlier deadline. Students must be in good academic standing with the Graduate School, their program, and their advisor. The Graduate School regularly reviews the record of any student who received grades of BC, C, D, F, or I in graduate-level courses (300 or above), or grades of U in research and thesis. This review could result in academic probation with a hold on future enrollment, and the student may be suspended from graduate studies.

In addition to the above minimum requirements, satisfactory academic progress in the ISyE department requires the following:

- All ISyE graduate students are expected to meet academic and professional conduct standards, as described in the ISyE Graduate Handbook. This includes, but is not limited to, behaving in a professionally ethical manner, contributing to a positive work culture, and conducting research ethically.
- Graduate students with assistantship positions (RA, TA, or PA) must adequately perform the responsibilities associated with their position, as determined by the supervisor of the position.

- PhD students must complete the qualifying exam, preliminary exam, and final defense of their dissertation within the required time limits (see the section on PhD requirements for what the time limits are).
- PhD students must make consistent progress toward their dissertation as appropriate for their year of study. Satisfactory research progress is determined by the PhD student's faculty advisor. Unsatisfactory progress will be communicated to the student by their faculty advisor and can be done via the annual assessment of student progress, by giving the student a grade of "U" in a research course, or by a written letter.

If a graduate student fails to make satisfactory progress as defined by any of the criteria outlined above, a review committee will be formed to review the circumstances and the student's record, taking input from the student. The review committee will consist of the student's faculty advisor and two other ISyE faculty members appointed by the Associate Chair for Graduate Affairs. The review committee will review the student's record and determine if the student is making satisfactory progress. If the student is determined to not be making satisfactory progress, the committee will also decide whether the student should be placed on departmental probation, or in exceptional cases (such as severe professional misconduct or academic misconduct as determined in accordance with UWS 14.04) be immediately removed from the ISyE graduate program and have their funding guarantee removed. In the event that a student is put on probation, the committee will provide the student with a written explanation of what is required for the probation to be lifted, and in what timeframe the requirements must be met. Failure to qualify for removal from probation after being on probation for a semester will lead to the removal of a PhD student's funding guarantee (see policy 12.1).

A student may be placed on probation or suspended from the Graduate School for low grades or for failing to resolve incompletes in a timely fashion. In special cases, the Graduate School permits students who do not meet these minimum standards to continue on probation upon recommendation and support of their advisor. Most programs require satisfactory progress to continue funding support.

Probation

The probationary status of each student on probation will be reviewed by a committee at the end of each regular semester to determine if the student is qualified for removal of probationary status. The committee will include the Associate Chair for Graduate affairs and two other faculty members appointed by the Associate Chair.

A student will be removed from probationary status under the following conditions:

- A student admitted on probation will be removed from probation if that student: Has met all special conditions specified in the letter from the Graduate School notifying the student of admission AND is making satisfactory academic progress according to the Department's current policy.
- Continuing students on probation will be removed from probation if they are deemed to be making satisfactory academic progress by current Department policy.
- A student may be removed from probation by special action of the Academic Affairs cluster.

A student placed on probation who fails to qualify for removal of probation at the next review of their probationary status will not be permitted to continue graduate studies in the ISyE Department, and any funding guarantee made to the student by the department is removed.

Please note that any student who is on probation will not be able to enroll for the following semester until their final grades are submitted and the Graduate School has verified that they are making satisfactory progress. For any questions relating to probation, please contact the Director of Academic Services at (608) 262-9209.

Minimum Credit Requirements

Fall and Spring: The minimum credit load to be considered a graduate student at UW-Madison is 2 graduate-level credits (300 or above). A student taking 2-6 credits during the Fall or Spring semester is considered a part-time

graduate student. A student taking 8-15 credits during the Fall or Spring semester is considered a full-time graduate student.
The maximum credit load for fall and spring semester is 15 graduate-level credits. Both F-1 and J-1 student visa regulations require students to be enrolled full-time each fall and spring semester. For more information on the Graduate School policies regarding enrollment, please visit the Enrollment Requirements page.

Summer: Enrollment for summer is not required for Graduate Students unless it is their final semester of their degree program, or they are planning to finish during the Fall Window period per Graduate School policy. (MS 2 cr required, PhD 3 cr required).

For International students: Summer enrollment for F-1 and J-1 international students is not required unless it is the initial summer of their program indicated on your I-20/DS-2019 or the final semester of study for their degree program (MS 2 cr, PhD 3 cr required).

Enrollment is also required for any student who is being paid and serving as a PA, RA or TA during the summer session. (See chart below).

PhD Dissertators: PhD Dissertator status, which is granted once a PhD student has passed their Preliminary Exam, allows a student to enroll for only 3 credits and be considered a full-time student. Dissertators also pay a lower tuition than other graduate students. To maintain dissertator status, students must enroll for no more than and no less than 3 credits each semester. For more information on dissertator status, please see the Graduate Schools Academic Policy on Dissertation Status.

****The Department does not require full-time status for all graduate appointments****

Minimum Credit Requirements for Full-Time Enrollment		
Categories	**Fall/Spring Minimum Credit Load**	**Summer Minimum Credit Load**
Dissertators	**3 credits**	**3 credits*** *required if receiving summer degree or if graduate assistant, trainee, or fellow
RA, Non-dissertator	**8 credits**	**2 credits*** All RAs are required to enroll in 2 credits over the summer
TA/Lecturer (SA) 33 %, non-dissertator	**6 credits**	**2 credits*** *required only if receiving summer degree
TA/Lecturer (SA) 50%, non-dissertator	**4 credits**	**2 credits*** *required only if receiving summer degree
PA 33%, non-dissertator	**6 credits**	**2 credits*** *required only if receiving summer degree
PA 50%, non-dissertator	**4 credits**	**2 credits*** *required only if receiving summer degree
Fellow, non-dissertator	**8 credits**	**2 credits** for 12-month appointments. Not required for 9-month appointments.
Trainee, non-dissertator	**8 credits**	**2 credits**
International student (F-1/J-1 visa), non-dissertator	**8 credits**	**4 credits*** *when summer is admit semester **2 credits*** *required only if receiving summer degree
If none of the above, full-time enrollment is:	**8 credits**	**4 credits**

Please note that pass/fail courses, audited courses, or courses below the 300 level do not count towards minimum or maximum requirements. They are in essence counted as zero credits.

Credit Overload / Reduced Course Load

To enroll for more than the maximum credit load (15 credits) in any given semester, students must submit a Credit Overload Request form. This form must be approved and signed by your faculty advisor and turned into the Graduate School at 217 Bascom Hall. The Graduate School will look closely at the rationale for the request, and if the request is approved, the student will be notified that they can add the course. ***This request MUST be submitted at least one week before the Add deadline.***

For International students: F-1 and J-1 international students are required to maintain full-time enrollment (8 credits) each fall and spring semester. To request an exception to this policy if needed (i.e., final semester or degree program, medical concerns, etc.), international students can complete a Reduced Course Load (RCL) form in the ISS Terra Dotta system.

Transferring Graduate Credits from other Institutions/ Prior Coursework

The Graduate School's minimum credit requirement for graduation can ONLY be satisfied with graduate-level courses taken as a graduate student at UW-Madison. Per UW Policy 1216, the Graduate School **does NOT** transfer credits. A student's program may decide to accept coursework completed outside of the student's graduate career at UW-Madison when those courses are rigorous and meet the expectations of a graduate work for the degree. Coursework earned five or more years prior to admission to a master's degree or coursework earned ten or more years prior to admission to a doctoral degree is not allowed to satisfy Graduate School minimum credit requirements. If a student would like to use credits from a previous institution, during the first semester of their program, students should first discuss this with their advisor for approval. If the advisor approves, students should complete a Course Substitution Form/ Course Transfer Request for each course along with a brief course description and syllabus for each course for review and approval by the department.

The Graduate School's minimum credit requirement to take residence at UW Madison for a Master's degree is 16 credits and 32 credits for a PhD. The ISyE Department will allow students to transfer courses and if approved by the department, they will appear on their UW-Madison transcript. Graduate students who have been absent for five or more years will lose all degree credits earned before their absence.

The ISyE Department will allow Graduate Students to use up to 9 credits from a previous **graduate** institution toward the MS Course program upon the approval of his/her academic advisor and the associate chair for graduate students. **(MS Research and PhD students can transfer more than 9 credits of course if approved by their advisor and the associate chair for graduate students).**

Note: Graduate students in the MS Course program with a UW Madison's bachelor's degree may count up to 6 credits of approved **undergraduate** course work toward the MS Course program also upon approval of the department and if graduate program is started within 5 years of receiving their bachelor's degree.

However, there are a few exceptions:

- Courses taken as an undergraduate student *cannot* be used toward the ISyE Graduate Program, except to fulfill the Breadth Requirement for PhD students. ****Exception: UW-Madison undergraduate students doing the MS Named Option are able to count their courses toward the Breadth Requirement for a PhD.**
- For University Special Students, please view the University Special Student Credit Conversion policy.

If a student would like to use credits from a previous institution, during the first semester of their program, students should first discuss this with their advisor for approval. If the advisor approves, students should complete a Course Substitution Form/ Course Transfer Request for each course along with a brief course description and syllabus for each course for review and approval by the department.

Teaching Evaluations (AEFIS System)

At the end of each semester, instructors are required to evaluate their teaching abilities through a teaching evaluation done through the University of Wisconsin-Madison's **HelioCampus Assessment (AEFIS) platform.** These evaluations are extremely useful to the department in evaluating faculty, determining tenure, and improving the department's curriculum. ***We strongly encourage students to complete the evaluations online. This is one of the most useful tools the department has to evaluate the teaching capabilities of their instructors and we rely heavily on students' feedback.***

Graduate Student Campus Resources

Graduate School Office
Location: 217 Bascom Hall, 500 Lincoln Drive
Tel: (608) 262-2433
Email: gsacserv@grad.wisc.edu

The Graduate School office and website have dozens of resources for current and prospective students. Please visit the Graduate School page for Current Students to get information on topics including:

- Academics Policies and Procedures
- Degree Completion Information
- Diversity
- Funding and Financial Aid Resources
- Professional Development

International Student Services (ISS)
Location: 716 Langdon Street; 217 Red Gym
Tel: (608) 262-2044
Email: iss@studentlife.wisc.edu

International Student Services (ISS) offers a wide variety of services and programs to international students at the University of Wisconsin-Madison. The ISS staff provides information and programs to international students about the campus and community and provides support and assistance concerning visas and related immigration issues. ISS serves the more than 4,000 international students on the campus at any given time. ISS provides valuable resources and services such as assistance with:

1) Add/Change of Major
2) F-1 & J-1 Employment Internship Options (CPE/OPT)
3) Extending I-20 visas
4) Legal and Tax Resources

University Health Services (UHS)
Location: 333 East Campus Mall, 7th floor
Tel: (608) 265-5600

Counseling for Engineering Graduate Students: The UW-Madison's Counseling Service is available because it is easier to concentrate on your studies if you can deal effectively with personal, academic and career concerns. Talking with

someone who is objective and empathetic can help you sort through these concerns. To make an appointment, call (608) 265-5600. For more information please visit the College of Engineering's Student Services page. ***Also, UHS offers counselor consultation for College of Engineering students through the University Health Services Let's Talk series.*** UHS Appointment Information

UW Madison Library System
Tel: (608) 262-3193
Email: libraries@library.wisc.edu
Online Chat: Ask a Librarian

There are libraries located throughout campus that offer a variety of resources for students on any subject. Please visit the library main page and graduate research support pages for more information.

UW Madison Writing Center
Location: 6171 Helen C. White Hall
Tel: (608) 263-1992

The UW Writing Center provides free of charge face-to-face and online consultations that focus on a number of different writing scenarios (i.e. drafts of course papers, resumes, reports, application essays, cover letters, theses, etc.). Writing Center instructors will not edit or proofread papers. Instead, their goal is to teach students to edit and proofread on their own in order to become a better, more confident writer.

International Academic Programs (IAP) (Study Abroad Program)
Location: 106 Red Gym
Tel: (608) 265-6329
Email: peeradvisor@studyabroad.wisc.edu

The International Academic Programs (IAP) collaborates with academic units to develop and deliver high-quality study abroad programs that foster students' academic, personal, and professional growth. There are more than 200 programs in more than 60 countries available as program options for students wishing to study abroad.

Engineering Career Services (ECS), Office of Student Development
Contact Person: Julie Rae, ECS Associate Director (MSR & PHD)
Location: 1150 Engineering Drive; 1415 Engineering Drive
Tel: (608) 262-3472
Email: julie.rae@wisc.edu

Contact Person: Sierra Grimm (MS COURSE SEA & HFHSE)
Location: 1150 Engineering Drive; 1415 Engineering Drive

Engineering Career Services provides lifetime tools for successful career development in a rapidly changing world. ECS helps students prepare for internship/co-op as well as job searches (resume and cover letter writing, listing of potential employers, etc.), practice interviewing skills (mock interviews, sample interview questions), and learn other important career information such as negotiating job offers and salaries.

Useful Resources:

- **ECS Workshop / Career Fair / Events Calendar and Policy Information**
- **UW Madison HANDSHAKE Program (Online Career Management System for all UW Students)**

Cooperative Education

Obtaining work experience prior to completing your degree requirements typically increases employment opportunities and starting salaries at graduation. Most UW engineering co-ops work full-time in an engineering position from Jan.-Aug. or May-Dec. The co-op provides a solid 8 to 12 months of paid engineering work experience. Alternating assignments are also an option.

International Students wanting to engage in a co-op or summer internship and Curricular Practical Training (CPT) should review the steps required to apply for a position.

Cooperative education is an academic option as part of your engineering education. Students who participate complete assignments and receive academic credit toward graduation. Students are allowed to count up to 3 credits of enrollment in ISyE 702 – Graduate Cooperative Education Program toward graduation. Students should consult with faculty advisor for approval. For permission to enroll, please contact the ECS office.

While on co-ops, students are considered full-time students and are eligible to maintain family or UW health insurance. Compensation is competitive, averaging $15/hr. The advantage of a co-op over an internship is the increased level of responsibility received due to the longer duration of the work term. Co-ops are able to work on larger and complex projects that require more time to complete. Please go to Engineering Career Services' Co-op and Internship page for more information. The co-op credit applies toward graduation requirements differently in each department. See how your credit(s) can apply.

Summer Internships

The Summer Internship is for students seeking engineering employment during the summer months. These 12–14-week assignments provide students with exposure to engineering while enabling the employer to fill short-term project needs. For detailed information on the Cooperative Education or Summer Internship programs, please contact Julie Rae (MS & PHD) or Sierra Grim (MS Course/Professional programs) in the Engineering Career Services Office (M1002 Engineering Centers).

International students can work with the International Student Services (ISS) office regarding **Curricular Practical Training** (**CPT**) (internship and co-op opportunities) during their program.

Students should sign up for the **Handshake Program** and then review CPT instructions here. Additional CPT and **Optional Practical Training** (**OPT** for after graduation) program information can be found here.

Off Campus Employment requirements for International Students:

1. Must be in lawful F-1 status
2. Must have been enrolled full-time for at least one academic year (Fall and Spring)
3. Must have a declared major (reflected in I-20)
4. Employment directly related to field of study

For detailed information on the Cooperative Education or Summer Internship programs, please contact **Julie Rae** (MS & PHD) or Sierra Grim (MS Course/Professional programs) in the **Engineering Career Services Office** in 1150 Engineering Hall.

College of Engineering Inclusion, Equity and Diversity (IEDE) Student Center

Location: 1410 Engineering Drive, Suite 101
Website: College of Engineering Inclusion, Equity and Diversity

Engineering as a discipline must feel welcoming to everyone—and creating that environment begins with each one of us. In the College of Engineering, all members of our community are responsible for making our college a place where everyone who wants to learn and practice engineering can feel included, supported, and empowered.

We recognize that this is not always the case, and we need to do better. We are expanding initiatives that help educate our own community about issues of inclusion, equity, and diversity, beginning with awareness of unconscious bias. We are also maintaining the pathways and programs that encourage and support the members of our community as they seek to become or develop as engineers and leaders. And through an inclusive process that sparks dialog, we are developing a long-term vision and strategy that are part of our college's larger commitment to addressing systemic and structural issues as a community.

McBurney Disability Resource Center

Location: 702 W. Johnson Street, Suite 2104
Tel: (608) 263-2741
TTY: (608) 263-6393
Email: mcburney@studentlife.wisc.edu

Students who have a documented disability or suspect that they may have an undiagnosed disability are encouraged to contact the McBurney Disability Resource Center to inquire about obtaining academic accommodations. The McBurney Center provides academic accommodations such as adaptive/assistive technology access, assistive listening devices, document conversion, elevator keys, ASL interpreting, note taking support, testing accommodations, and reduced credit load recommendations to name a few. Students must provide documentation and be registered with the McBurney Center to receive Verified Individualized Services and Accommodations (VISA) before they can obtain accommodation. Apply for Accommodations here.

Master's Degree Programs and Requirements

The ISyE graduate program offers two master's (MS) degree programs:
1) MS Professional Degree (30-credit)
- Systems Engineering and Analytics
- Human Factors and Health Systems Engineering

2) MS Research Degree (30-credit)

1) Master of Science in Industrial Engineering Course Program Options – 30 credit programs:

1. **Systems Engineering and Analytics (SEA) –** The program in Systems Engineering and Analytics will train students to recognize, identify, analyze, and solve decision problems arising in the efficient operations of engineering systems. The program focuses on methods and models for data analytics and data-driven decision-making.

   MS SEA Course Suggestions
   MS SEA Course Suggestions
2. **Human Factors and Health Systems Engineering (HFHSE) –** By examining, designing, testing, and evaluating products, environments and how people interact in it, Human Factors and Health Systems Engineering professionals can create productive, safe, and satisfying environments for humans, and apply industrial and systems engineering tools and approaches to specific health care problems.

   MS HFHSE Course Suggestions

   MS Programs Course Planning Grid and Final Semester/Exit Requirements

MS Course Program / Graduate School Policy

- 30 credit degree programs; may transfer up to 9 credits of prior graduate coursework if applicant has previous MS degree from institution other than UW-Madison with approval by department advisor
- UW-Madison students completing their bachelor's degree at UW-Madison may count up to 6 credits of approved coursework numbered 300 or above towards the degree with prior program approval.
- Of the required credits, all must be at the 300 level or higher, at most 6 credits may be at the 300 level, at least 15 must be at the graduate level, at least 18 credits must be in the Industrial and Systems Engineering Department, and at least 16 credits must be taken as a graduate student in residence at UW-Madison. (Graduate-level courses are those identified with the Graduate Level Coursework attribute in the University course guide.)
- This accelerated program is designed to be possible to complete in 12 – 16 months (including summer courses). Internship and co-operative (co-op) work experiences are an optional component to this degree. The program must be completed within 24 months (about 2 years) for students who plan to include internship or co-op work experiences during their program. The ISyE department does not guarantee availability of internship or co-op positions. It is up to students to find such positions independently.
- In keeping with UW-Madison policy, students enrolled in the MS Course Programs (HFHSE and SEA) are not eligible to receive tuition remission from graduate assistantship appointments (RA, PA, or TA)
- For more information, please review the MS Course Program Policy Requirements.

Master of Science in Industrial Engineering Research – 30 credits:

The MS Research program requirements vary according to Focus Area and in consultation with their assigned faculty advisor. MS Research Program Planning Grid/Warrant Request

MS Research Program Policy Details

Completing Your Master's Degree:

To be eligible for graduation, a MS student must:

- Indicate plans to graduate in MyUW center
- Meet all MS degree course requirements
- Review Graduate School Instructions on Completing Your Master's Degree.
- Have a GPA of 3.0 or higher
- Have all grades entered, except for the current semester (all I or NR (No Report) grades must be changed to an actual letter grade); please check your UW Student Transcript information to confirm that all final grades have been entered for previous semesters (all P [Progress], I [Incomplete], or NR [No Report] grades must be changed to actual letter grades in order for a final warrant to be processed). Final semester grades are not required to be posted when submitting the warrant request.
- Be enrolled in at least 2cr the semester in which they graduate or pay a Degree Completion Fee (which is equivalent to 2cr of tuition)
- Save approved and signed final MS planning grid to IE Box file to request MS degree warrant with the Graduate School (see instructions below).
- If you earn a C or below in any course, that course cannot be counted toward your 30-credits
- Apply for graduation

Each semester, the Graduate Coordinator will send out an email asking for information from MS students who plan to complete their degree that semester. If you plan to graduate, please upload a final MS Planning Grid (links above, approved and signed by your advisor) to your IE Box Folder and send email to the Graduate Coordinator (Pam Peterson at prpeterson@wisc.edu) to confirm you are finishing your degree.

The Graduate Coordinator and Associate Chair of Graduate Affairs will review the student's GPA, grades, and courses to ensure they have met all the MS degree requirements to then submit a final MS Warrant request thru the Ewarrant system with the Graduate School. Once the Graduate School approves the MS Warrant request, the Graduate School will send the final MS degree warrant to the department. An email will be sent to the student from the Graduate Coordinator when the warrant has been processed for confirmation. The department will then sign the final warrant at the end of the semester for the degree posting with the Graduate School. Students can then request a certified electronic diploma from the Registrar's Office.

Things to remember when finishing your MS degree:

- Once a student submits their degree warrant and applies for graduation, they will no longer be able to enroll in courses.
- Contact the ISyE Payroll and Benefits specialist (Megan Cusack) to confirm you are graduating.
- Once a student graduates, they can no longer be paid because they can no longer enroll for future semesters. Students will maintain student status *only* until the graduation date for the semester they graduate.
- International students are required to add a diploma address in their Student Center, or their diploma will NOT be mailed. For domestic students, the diploma will be mailed to their mailing address. The degree diploma will be

mailed 12-14 weeks (about 3 months) after the degree deadline. Students should log into their Student Center and verify their mailing/diploma address to be sure it is correct.

- International students who want to invite their families to commencement need to fill out and submit an invitation letter.
- International students should also review the ISS Program Completion Checklist.
- An online survey will be emailed to all graduate students completing their degree. *This survey is extremely helpful to the department in tracking where students go after graduation.* We appreciate your cooperation in completing this survey.
- Your email account will be left active a few months after graduation. You will receive an email notifying you when your account will be deactivated.
  - Make sure to review the Steps to Take Before Leaving UW-Madison.
  - Remember to stay connected and feel free to contact the Student Services Office if you have any questions or concerns in the future.

Double Major Students: Students receiving a second master's degree from UW-Madison, and students receiving two master's degrees during the same semester, must submit official lists of courses used for each degree before requesting a final warrant. Students can overlap up to 25% of credits from the program approximately 8 credits of overlap. Example: One MS degree requires 30 credits and the other requires 24 credits. The student can overlap 25% of 24 credits which is 6 credits. All UW-Madison MS degrees are 30 credit programs.

PHD Degree Requirements

The Doctor of Philosophy degree is the highest degree conferred by the University. It is a research degree and is never conferred solely as a result of any prescribed period of study. The degree is granted on evidence of general proficiency, distinctive attainment in a special field, and the ability for independent investigation (as demonstrated in a thesis presenting original research or creative scholarship with a high degree of literary skill). PhD students should use the PhD Plan of Study form for tentative planning of PhD program requirements in consultation with faculty advisor.

The basic steps and requirements for a PhD degree in the ISyE Department include:

1. Completion of at least 51 graduate level credits, including research credits
    i. 32 of the 51 credits is the minimum resident requirement (i.e., taken at UW)
2. Qualifying Examination
3. Breadth Requirement
4. Colloquium Requirement
5. Completion of Minor
6. Formation of Thesis Research and Committee
7. Preliminary Examination
8. Final Defense Examination

Additional Requirements for Human Factors PhD Students

HFE Depth Requirement: The depth requirement for human factors and ergonomics includes both coursework and exam components.

Course Requirement: To take the qualifying exam, a student will have to have received a grade of AB or better in at least one course in each of the three areas below. Courses taken during undergraduate studies can be used to satisfy this requirement:

a. Cognitive Ergonomics:

UW courses that would qualify: ISyE 555, ISyE 556, ISyE 601(depending on topic), ISyE 699 (depending on topic), ISyE 859 (depending on topic)

b. Sociotechnical Systems / Macroergonomics:

UW courses that would qualify: ISyE 555, ISyE 556, ISyE 610, ISyE 652, ISyE 653, ISyE 601(depending on topic), ISyE 699 (depending on topic), ISyE 854 (depending on topic)

c. Physical Ergonomics:

UW courses that would qualify: ISyE 555, ISyE 564, ISyE 565, ISyE 662, ISyE 601 (depending on topic), ISyE 699 (depending on topic)

Prior to defending their dissertation, Human Factors PhD students must complete at least six seminar/special topics courses at the 700 level or above totaling a minimum of 12 credits; at least three totaling at least 6 credits of these must be in the Human Factors and Ergonomics area. Students may use 700+ level seminar courses also as breadth courses if not Human Factors focused toward requirements. Other courses may qualify. Students may submit courses to the HFE Area group for consideration. Transfer students should submit a course syllabus or description and

transcript for any courses from other institutions they want to have considered for satisfaction of this requirement. The HFE Area group will make this decision.

Qualifying Examination

Based on a student's background and previous coursework, the PhD advisor should determine the coursework needed for a student to prepare for the Qualifying Examination. Prior to registering for the qualifying exam, the student must have completed either the PhD Tentative Plan of Study form or the PhD Tentative Plan of Study form (Human Factors Students). Students sign up for the qualifying exam by filling out the Qualifying Exam Registration Form by the first Friday of the fall semester in the year they plan to take the exam. This form must be returned to ME 3107. The qualifying exam is usually done after one year of graduate study beyond the MS degree. The qualifying examination requirement **must be satisfied by the end of the fifth semester of enrollment after entering the graduate program**. Exceptions to this time limit may be granted by appeal to the Academic Affairs cluster.

The format of the qualifying exam depends on the student's research area:

1. Operations Research, Optimization and Analytics
    a. DS/OR Qualifying Exam
    b. Optimization Qualifying Exam (note: this exam is administered by the Computer Science Dept.)
2. Health Systems Engineering
    a. HSE Qualifying Exam
3. Human Factors and Ergonomics
    a. HFE Qualifying Exam
4. Advanced Manufacturing and Industrial AI (Artificial Intelligence)
    a. Manufacturing Production Systems (MPS) Qualifying Exam

Policies, examples, and other information regarding Qualifying Exams are categorized according to specific focus areas, and can be found on the department Intranet site.

Breadth Requirement (12 credits)

The purpose of the breadth requirement is to make sure the PhD student achieves minimum competence in multiple areas of industrial and systems engineering. It consists of taking at least two courses (6 credits) in **methodology** and two courses (6 credits) in **application**. Students can choose these courses from the list below and must obtain a grade of B or above in both courses.

The courses selected by the student must be approved by the student's advisor (via the PhD Tentative Plan of Study form). These courses must be completed before a PhD student can request their Preliminary Warrant. Courses the student has taken before entering the PhD program can be counted toward this breadth requirement, including courses taken as an undergraduate. Students should submit the course title and syllabus to the Student Services Coordinator who will then seek approval from the Chair of Graduate Affairs.

- It is allowed to use courses within a student's research area to meet this requirement.
- A student must receive a grade of B or higher to use a course for this requirement.
- As of the time of this policy revision, methodology courses include courses in the Human Factors and Ergonomics and Operations Research, Optimization and Analytics areas, and application courses include courses in the Health Systems Engineering and Advanced Manufacturing and Industrial AI areas.
- Transfer courses and courses taken by a student as an undergraduate can be used to meet this requirement if they are determined to qualify as an ISyE methodology or application course. This determination is made by the

associate chair for graduate affairs in consultation with the student's faculty advisor and faculty in the associated area.

List of Approved Breadth Requirement Courses from UW-Madison

Methodology:

ISyE 313: Engineering Economic Analysis
ISyE 320: Simulation and Probabilistic Modeling
ISyE 323: Operations Research: Deterministic Modeling
ISyE 349: Introduction to Human Factors
ISyE 412: Fundamentals of Industrial Data Analytics
ISyE 425: Introduction to Combinatorial Optimization
ISyE 512: Inspection, Quality Control and Reliability
ISyE 515: Engineering Management of Continuous Process Improvement
ISyE 516: Introduction to Decision Analysis
ISyE 518: Wearable Technology
ISyE 521: Machine Learning in Action for Industrial Engineers
ISyE 524: Introduction to Optimization
ISyE 525: Linear Programming Methods
ISyE 526: Advanced Linear Programming
ISyE 549: Human Factors Engineering
ISyE 552: Human Factors Engineering Design and Evaluation
ISyE 555: Human Performance and Accident Causation
ISyE 562: Human Factors of Data Science and Machine Learning
ISyE 564: Occupational Ergonomics and Biomechanics
ISyE 575: Introduction to Quality Engineering
ISyE 602: Special Topics in Human Factors
ISyE 603: Special Topics in Engineering Analytics and Operations Research
ISyE 618: Quality Engineering and Quality Management
ISyE 620: Simulation Modeling and Analysis
ISyE 624: Stochastic Modeling Techniques
ISyE 632: Introduction to Stochastic Modeling
ISyE 652: Sociotechnical Systems
ISyE 653: Organization and Job Design
ISyE 662: Design and Human Disability and Aging
ISyE 719: Stochastic Programming
ISyE 722: Computer-Based Data Management
ISyE 723: Dynamic Programming and Associated Topics
ISyE 726: Nonlinear Optimization I
ISyE 727: Convex Analysis
ISyE 730: Nonlinear Optimization II

Applications:

ISyE 315: Production Planning and Control
ISyE 415: Introduction to Manufacturing Systems, Design and Analysis
ISyE 417: Health Systems Engineering
ISyE 510: Facilities Planning
ISyE 513: Analysis of Capital Investments
ISyE 517: Decision Making in Health Care

ISyE 520: Quality Assurance Systems
ISyE 556: Occupational Safety and Health Engineering
ISyE 557: Human Factors Engineering for Healthcare Systems
ISyE 578: Facilities Location Models
ISyE 604: Special Topics in Manufacturing and Supply Chain Management
ISyE 605: Computer Integrated Manufacturing
ISyE 606: Special Topics in Healthcare Systems Engineering
ISyE 608: Safety and Quality in the Medication Use System
ISyE 610: Design of Program Evaluation Systems
ISyE 612: Information Sensing and Analysis for Manufacturing Processes
ISyE 615: Production Systems Control
ISyE 617: Health Information Systems
ISyE 641: Design and Analysis of Manufacturing Systems
ISyE 643: Performance Analysis of Manufacturing Systems
ISyE 645: Engineering Models for Supply Chains
ISyE 658: Managing Technological Change in Manufacturing Systems
ISyE 671: E-Business: Technologies, Strategies and Applications
ISyE 703: Quality of Health Care: Evaluation and Assurance
ISyE 729: Behavioral Analysis of Management Decision Making
ISyE 875: Cost Effectiveness Analysis in Health and Healthcare

Colloquium Requirement

For at least two semesters, students must regularly attend a colloquium series according to ISyE P 14.1 section 4.5. The appropriate colloquium series must be approved by the student's faculty advisor. It is not required to meet this requirement by registering for a course (indeed some colloquium series have no associate course). Instead, attendance at the approved colloquium series must be confirmed by the student's faculty advisor when the student submits their PhD Plan of Study prior to their preliminary examination. Example of colloquium series that can be used to meet this requirement include the ISyE Colloquia and the Systems, Information, Learning and Optimization (SILO) seminars.

Ph.D. Minor

Ph.D. Students must complete a Minor requirement for their degree program by completing a cohesive group of courses outside the ISyE major in order to add breadth to their program. The courses should help students in their PhD research preparation. The student must consult the requirements for his or her PhD minor with their advisor before deciding which option to pursue.

Once a Minor is decided, students should declare their Minor program information through the Graduate School Add/Change Program Request System to add this to their student record. Students should list their intended minor via the PhD Tentative Plan of Study Form, which must be approved by their advisor. Minors must be completed by the end of the semester during which the preliminary exam is taken.

The Minor consists of two options:

Option A Minor: Some departments require more than 9 credits for a Minor and others have specific course requirements. The Department of Industrial and Systems Engineering requires at least 9 credits of coursework in a single department and approval by that department. Please check with each department for their specific Minor requirements.

Option B Minor: Requires at least 9 course credits from one or more departments. An ISyE course may not be used for the Option B minor, except that a course cross listed with ISyE may be used if the home department for such course is not ISyE. In addition, the student's advisor must approve the set of courses being used to satisfy Option B minor. The student must choose a Minor Topic and submit an attached paragraph explaining how their minor courses relate to their Minor Topic and provide a cohesive minor enhancing their Doctoral Program. For Option B, the minor proposal must be approved before or by the time six of the total credits required for the minor are completed. Students must submit their approved Minor Form before they can request their Preliminary Warrant. Minor approval forms for either option can be obtained on the ISyE website forms page. For more information, please see the PhD Policy ISyE P 14.1.

Thesis Research and Committee

Attaining a PhD requires preparing a thesis on a research topic selected by the student and their advisor. Once a research project is selected, the student must choose his or her thesis committee*. The ISyE Graduate Program requires the thesis committee shall consist of **at least four members for the Preliminary Exam Committee and at least four members for the Final PhD Defense Committee**, including:

- The Committee Chair (the student's primary advisor). The Committee Chair must be an ISyE faculty. Emeritus faculty cannot serve as the Committee Chair.
- Three other graduate faculty members or former UW-Madison graduate faculty up to one year after resignation or retirement with two faculty members having their tenure home in ISyE.
- All Committee members are required to be readers.
- The dissertation committee must consist of at least 4 members (4 members for prelim exam) and meet the requirements set forth by the Graduate School, including for example, at least one of the members of the committee must be from a UW-Madison program outside the Industrial and Systems Engineering Department.
- Additional committee members may be added from any of the following categories: graduate faculty, faculty from a department without a graduate program, academic staff (including emeritus faculty), visiting faculty, faculty from other institutions, scientists, research associates, and other individuals deemed qualified by the executive committee (or its equivalent).

Please visit the UW-Madison Policy Library for additional committee information.

Preliminary Examination and Dissertator Status

This preliminary examination includes an oral presentation based on a written proposal and a detailed plan to carry out the PhD thesis. The Preliminary Exam signifies that point at which a PhD student has completed all the necessary course work and is ready to strictly carry out research for the rest of their program. Students must consult with their advisor for specific details of the requirements for the preliminary examination. The written component of the preliminary examination includes a literature review and research results obtained to that point, together with the proposal for the remaining work to be included in the thesis. The preliminary examination should be completed well before all the dissertation research is complete (e.g., ideally over a year before the final oral defense), for the student to receive feedback from the exam committee on the research plan.

The preliminary exam must be completed within 4 years of joining the ISyE graduate program (including time taken in the ISyE MS graduate program at UW), and within 3 years of passing the qualifying exam. Exceptions could be granted by the Academic Affairs Cluster through a petition process.

To be eligible for the Preliminary Examination, a PhD student must:

- Have a GPA of 3.0 or higher
- Complete at least 32 credits of graduate-level courses in residence at UW-Madison (including research credits)
- Pass the Qualifying Exam and complete Breadth Requirement
- Declare Minor program information in the Graduate School Add/Change Program request system and complete their Minor Program Form information signed by minor program advisor / department.
- Check UW transcript information to confirm all grades have been entered, except for the current semester. No Progress (P), Incomplete (I) or No Report (NR) grades can show on the student's transcript.

Ph.D. Final Defense Exam and Warrant

The ISyE PhD final defense examination requires a demonstration of the unique contributions of the research and a defense of the methods used and conclusions drawn. The final defense must be completed either within two years after passing the Preliminary Examination or by the end of the 6th year in the graduate program, whichever is later. Please see the Graduate School Doctoral Guide for more information on finishing your degree.

To be eligible for graduation, a PhD student must:

- Have a GPA of 3.0 or higher
- Meet all PhD degree requirements
- Have all grades entered, except for the current semester; please check your UW Student Transcript information to confirm that all final grades have been entered for previous semesters (all P [Progress], I [Incomplete], or NR [No Report] grades must be changed to an 'S' Satisfactory grade or actual letter grades in order for a final warrant to be processed. Final semester grades are not required to be posted when submitting the warrant request.
- Be enrolled in at least 3 credits the semester in which they graduate or pay a Degree Completion Fee (which is equivalent to 12 times the per-credit dissertator rate of tuition)
- Complete a PhD Final Defense Warrant Request with the department.
- Submit a Final PhD Defense Announcement with the department.
- Have their final PhD Final Defense Warrant signed, dated, and submitted electronically through the ProQuest System to the Graduate School by the degree deadline.
- Students can then request a certified electronic diploma from the Registrar's Office.

The PhD Final Defense Warrant Request must be submitted at least four weeks before the proposed exam date.

Students should upload a completed Minor form and PhD Prelim Exam Request to their IE student BOX folder with only their advisor's signature, which will notify the Graduate Coordinator (Pam Peterson) to obtain the Associate Chair's signature. (Students in the Human Factors and Ergonomics area group should fill out the HFE Prelim Exam Request Form for confirming they have met the coursework requirements for that area – see HFE course requirements described on page 28).

- After uploading the form to BOX, students should email Graduate Coordinator Pam Peterson for confirmation.
- The Graduate Coordinator and Associate Chair for Graduate Affairs will review the student's GPA and transcript record to confirm the PhD program requirements for taking the Prelim Exam have been met.
- The Graduate Coordinator will then request the Prelim Exam warrant from the Graduate School; processing time generally will take 2-3 weeks.
- Once the warrant is processed, students will be notified by the Graduate Coordinator and can see a copy of the warrant in their MyUW student center graduate portal. On the day of their Prelim Exam, students should email the Graduate Coordinator, who will send the committee members a link to collect e-signatures.

Upon passing the Preliminary Exam, PhD students will obtain Dissertation Status. A dissertator is a unique reduced tuition fee status for students who have completed all requirements for a PhD degree except for the dissertation.

Once students achieve dissertator status, they must maintain continuous enrollment until completion of the doctoral degree. To maintain continuous enrollment, dissertators must enroll each fall and spring semester for 3 credits (usually ISyE 990 Research) directly related to their dissertation research (generally research and thesis and/or required seminars). In some cases, the 3 credits can be a combination of research and a seminar. Fall and spring enrollment are required whether they reside in Madison. Summer enrollment is required if finishing with a summer PhD degree posting.

After the final PhD defense, the student must follow all the procedures described in the Guide to Preparing Your Doctoral Dissertation. The student is responsible for following the Graduate School procedures and depositing of their signed final PhD warrant and dissertation electronically with the Graduate School.

Things to remember when completing your PhD degree:

- Make sure to notify the Graduate Student Coordinator Pam Peterson, as well as the departments that you are planning to graduate.
- If you are being funded by the department as a RA/TA/PA, please also notify the Payroll and Benefits Specialist Megan Cusack.
- Return all keys to Main Office Manager, Kelly Petersen.
- Once a student submits their warrant and final dissertation to the Graduate School, they will no longer be able to enroll for future semesters.
- Once a student graduates, they can no longer be paid because they can no longer enroll for future semesters. Students will maintain student status *only* until the graduation date for the semester they graduate.
- International students are required to add a diploma address in their Student Center, or their diploma will NOT be mailed. For domestic students, the diploma will be mailed to their mailing address. The degree diploma will be mailed 12-14 weeks (about 3 months) after the degree deadline. Students should log into their Student Center and verify their mailing/diploma address to be sure it is correct.
- International students that would like to invite their families to UW-Madison for commencement may request an invitation letter through the International Student Services office.
- International students should also review the ISS Program Completion Checklist.
- An online survey ISyE Graduate program Exit survey will be emailed to all graduate students completing their degree. *This survey is extremely helpful to the department in providing program feedback for graduating students.* We appreciate your cooperation in completing this survey.
- Your email account will be left active a few months after graduation. You will receive an email notifying you when your account will be deactivated.
- Please stay in touch with the ISyE Department after graduation and should you have any questions or need assistance in the future, please feel free to contact the ISyE Graduate Coordinator Pam Peterson or the ISyE main office staff.
- Students should also review the Steps to Take Before Leaving UW-Madison.

Commencement and Beyond

Commencement

Graduate students are encouraged to participate in the commencement ceremony. Commencement ceremonies are held in December and May. Because there is no ceremony offered during the summer, students can participate in the Fall or Spring ceremony. Students should think of their degree completion and participation in the commencement ceremony as two separate events.

To participate in the commencement ceremony for any given semester, the student must notify the Student Services at least 8 weeks (about 2 months) before. A student can decide to participate in the ceremony up until the day of the ceremony, but if they have not notified the Student Services 8 weeks (about 2 months) before the ceremony, their name will not be printed in the commencement program. Traditionally, PhD students are escorted by their faculty advisor. PhD students should discuss their commencement plans with their advisor. For more information on ordering the proper attire, dates, and times, please see the Secretary of the Faculty website. **Remember to order your cap and gown and to check out the College of Engineering Graduation Recognition Event page.**

Staying connected after graduation as a student and alum

Please make sure to stay in touch via the following social media outlets but also feel free to contact our Communications Specialist with stories you want to share about how ISyE has impacted your life and career.

ISyE Facebook, Twitter, LinkedIn, Instagram, and YouTube Pages

Please be sure to like our Facebook page and follow our Twitter feed to stay up to date on all that is happening in ISyE. See photos and updates from your favorite faculty members, connect with current and past classmates, share your own ISyE story, and read about how ISyE students, alumni, and faculty are making things better.

- **Facebook (@uwisye)**
- **Twitter (@uwisye)**
- **LinkedIn Department Page (UW-Madison Dept. of Industrial and Systems Engineering (ISyE)**
- **Instagram (uwisye)**
- **YouTube (uwmadisonISyE)**

ISyE Alumni and Student LinkedIn Group

This is a terrific opportunity to stay connected to your classmates and build a professional network through ISyE alumni and students. The UW-Madison ISyE Alumni and Student LinkedIn Group will allow you to search, find, and contact other ISyE alumni and students in addition to the hundreds of thousands of users you can reach through your extended LinkedIn network. It is a convenient approach to connect with others and maintain up-to-date contact information. LinkedIn employs an opt-in-approach to selective networking, meaning you control the amount of detail you share and who to share it with. Contacts only occur with and through people you know and trust. And there is no cost to join LinkedIn!

Financial Support/Insurance Benefits

Teaching Assistantship (TA) / Research Assistantship (RA) / Project Assistantship (PA)

The ISyE Department offers several diverse types of financial support for graduate students in the research option and PhD programs. Three common types of financial support are Teaching Assistantships, Research Assistantships, and Project Assistantships (TA/RA/PA respectively). Teaching Assistants, Research Assistants, and Project Assistants with at least a 33% appointment are eligible to receive tuition remission and health insurance coverage. Please note, students who receive tuition remission are still ***required to pay segregated fees*** by the tuition due date. The amount charged for segregated fees is based upon the number of credits the student has enrolled in. Tuition and Segregated fees can be viewed and paid through the student center section of a student's MyUW account. Please contact Megan Cusack for more information.

In keeping with UW-Madison policy, students enrolled in the MS Course Programs (HFHSE and SEA) are not eligible to receive tuition remission from graduate assistantship appointments (RA, PA, or TA)

Applying for Research Assistantships:

Professors decide whom they will appoint as a Research Assistant (RA) on their research grants. Professors review graduate applicants when hiring new RAs.

Applying for Project Assistantships:

There are a few Project Assistant (PA) opportunities on campus. Professors decide whom they will appoint as PAs on their research grants. Announcements of openings are sometimes posted on UW Job Center.

Applying for Teaching Assistantships:

Teaching Assistant (TA) positions are highly competitive, and the number of positions offered is relatively small compared to the number of applicants. TA positions are assigned by the department. When there is an unfilled position, a recruitment announcement will be posted, and an email will be sent to eligible ISyE graduate students.

English Language Requirements for Teaching Assistants:

All international students applying for teaching assistant positions must meet the UW–Madison Graduate School's requirement for spoken English BEFORE they can be considered as a TA. This requirement can be fulfilled in two ways:

1. Pass the SPEAK—you can register for the SPEAK test through Megan Cusack in Room 3107 ME, mcusack3@wisc.edu.
2. Receive a 26 or higher on the speaking portion of the TOEFL (Test of English as a Foreign Language) test (or equivalent). Provide a copy of your score to Megan Cusack in Room 3107 ME, mcusack3@wisc.edu

Criminal Background Check: A criminal background check will be conducted on all new graduate assistants.

Required Training – New teaching assistants: College policies require these workshops for all **new** TAs. The workshops benefit TAs and the students with whom they interact. Because each university is different, even those who have

attended TA or teacher training at another university are required to participate. You will build from a common base and share perspectives with both new and experienced engineering educators.

The mission of the program is to improve the quality of undergraduate and graduate education through a series of workshops that enable teaching assistants to develop professionally and to continuously improve those skills needed to enhance student learning. To accomplish this mission, the program will aim to generate enthusiasm and excitement about teaching and place an emphasis on the value and importance of their role as a teacher. Furthermore, this program aims to expose participants to education and learning theories and to provide practical suggestions to help teaching assistants with their classroom responsibilities. Finally, the program is designed to foster communication among those who teach in the College of Engineering.

Required Training – Experienced TAs: A TA appointment requires attendance at this program. Please choose workshops that will meet your needs and the needs of your students. Information on the New Educators Orientation (NEO) can be obtained at http://ceete.engr.wisc.edu/ta-training/. There are two classifications of Teaching Assistants based on experience training and education.

1) **Standard TA:** A TA who does not meet the qualifications of a Senior TA.
2) **Senior TA:** Has had one and two-thirds (1 ⅔) or more semester-units of experience and has completed all course-work and departmental requirements for candidacy for a PhD or has already been awarded a PhD and has completed one and two thirds (1 ⅔) or more semester units of experience prior to employment.

Note: TAs are included in a labor agreement between the State of Wisconsin and the Teaching Assistants Association. This agreement contains valuable information regarding Teaching Assistantships.

Teaching Assistants will receive student evaluations using the College of Engineering Teaching Evaluation Form.

Department Rate Structure

The department uses four of the five default stipend rates established by the College:

- **Level 4:** NSF Fellowship equivalency
- **Level 3:** CoE Senior Rate (1.2 CoE Standard Rate)
- **Level 2:** Wisconsin Distinguished Graduate Fellowship (WDGF)
- **Level 0:** CoE Standard TA Rate

TAs can be appointed at level 1, 2, or 3. RAs can be appointed at levels 0, 2, 3, and 4. For PhD students, the protocol for selecting the appropriate TA stipend will typically match their most previous research level appointment. Master's PA students are typically appointed at level 0. Master's TA students are typically appointed at level 1.

		Annual
Level 4	NSF Fellowship equivalency	$34,000
Level 3	CoE Senior Rate	$31.415
Level 2	WDGF equivalency	$29,000
Level 1	CoE Standard RA Rate	$28,153
Level 0	CoE Standard TA Rate	$26,265

ISyE Rate Structure:

		Annual Stipend for 50% appointment (FY23)	RA	TA	PA
Level 4	**NSF Fellowship equivalency**	**$34,000**	**Highest RA**	**N/A**	**N/A**
Level 3	**CoE Senior Rate**	**$31,415**	**Middle RA**	**Highest TA**	**Highest PA**
Level 2	**WDGF equivalency**	**$29,000**	**Lowest RA for PhD Students**	**PhD Students**	**Middle PA (min for PhD Students**
Level 1	**CoE Standard RA Rate**	**$28,153**	**N/A**	**Master's Students**	**N/A**
Level 0	**CoE Standard TA Rate**	**$26,265**	**Lowest RA rate for MS Students**	**N/A**	**Lowest PA for MS Students**

*CoE definition of campus minimum = minimum rate for TA standard (academic) converted to 12 mo
TA standard (academic): 9 mo at 50%= $21,115

Useful Links:

- Graduate School Funding and Financial Aid
- ISS Funding and Scholarships
- Bursar's Office/Tuition

Health Insurance

TAs, PAs, RAs, and fellows holding a minimum of 33% appointment are eligible for group health insurance through the university. The university will pay for most of the premium. You are encouraged to take care of this as soon as possible, as the **strict deadline of a 30-day enrollment period** is observed.

All UW-Madison students are eligible to receive health care at the University Health Service (UHS). Hospitalization and emergency room services are not included in UHS benefits. To activate your insurance benefits, you must see the Payroll & Benefits Specialist.

Health Insurance for International Students: International students are required to purchase SHIP insurance unless they have other health insurance that meets certain minimum standards. International students with a RA or RA/TA appointment are eligible for UW health insurance; once you sign up for a UW health insurance plan you are automatically waived from the SHIP requirement. For more information see: http://www.uhs.wisc.edu/.

Tax Information

All RA, TA and fellowship income is subject to federal and state income tax. However, only RAs and TAs have taxes withheld from their checks; fellows do not. You may want to save receipts for school fees, books, and supplies in case you can claim tax deductions for them. Check with your tax advisor. Tax withholding (W4) forms can be easily accessed online. For questions about specific tax situations, students should contact the Internal Revenue Service or a tax advisor. The UW does not provide tax advice.

Tax Information for International Students: *Non-US residents from countries with which the US has a tax treaty may be tax exempt. More information and other tax filing resources can be found at https://uwservice.wisconsin.edu/tax/filing-resources.php.*

ISyE Department Policies

All Department Policies are available to view on our intranet page.

Grievance Procedures

If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. Student's concerns about unfair treatment are best handled directly with the person responsible for the objectionable action. If the student is uncomfortable making direct contact with the individual(s) involved, they should contact the advisor or the person in charge of the unit where the action occurred (program or department chair, section chair, lab manager, etc. Many departments and schools/colleges have established specific procedures for handling such situations; check their web pages and published handbooks for information. If such procedures exist at the local level, these should be investigated first.

For more information, visit the College of Engineering website.

Procedures for proper accounting of student grievances against ISyE faculty, staff, or students:

1. The student is encouraged to speak first with the person toward whom the grievance is directed to see if a situation can be resolved at this level.
2. Should a satisfactory resolution not be achieved, the student should contact the Associate Chair for Graduate Affairs, to discuss the grievance. The Associate Chair will facilitate problem resolution through informal channels and facilitate any complaints or issues of students. The first attempt is to help students informally address the grievance prior to any formal complaint. Students are also encouraged to talk with their faculty advisors regarding concerns or difficulties, if necessary. University resources for sexual harassment, discrimination, disability accommodations, and other related concerns can be found through the UW-Madison Office of Compliance.
3. Other campus resources include:
    - The Graduate School
    - McBurney Disability Resource Center
    - Employee Assistance Office
    - Ombuds Office
    - University Health Services
4. If the issue is not resolved to the student's satisfaction, the student can submit the grievance to the Grievance Advisor, which may be either the Associate Chair for Graduate Affairs or the Department Chair, as chosen by the student. The grievance should be submitted in writing, within 60 calendar days of the alleged unfair treatment.
5. On receipt of a written complaint, the Grievance Advisor will form a faculty committee that will review the complaint and gather further information as necessary from the filer of the complaint and other parties involved (including the party toward whom the complaint is directed).
6. The faculty committee will determine a decision regarding the grievance. The Grievance Advisor will report on the action taken by the committee in writing to both the student and the party toward whom the complaint was directed within 15 working days from the date the complaint was received.
7. At this point, if either party (the student or the person toward whom the grievance is directed) is unsatisfied with the decision of the faculty committee, the party may file a written appeal. Either party has 10 working days to file a written appeal to the School/College.

8. Documentation of the grievance will be stored for at least 7 years. Significant grievances that set a precedent will be stored indefinitely.

The Graduate School has procedures for students wishing to appeal a grievance decision made at the school/college level. These policies are described in the **Graduate School Academic Policies and Procedures – Grievances & Appeals.**

Hostile and Intimidating Behavior

Hostile and intimidating behavior, sometimes known by the shorthand term "bullying," is defined in university policy as "unwelcome behavior pervasive or severe enough that a reasonable person would find it hostile and/or intimidating and that does not further the University's academic or operational interests."

Hostile and intimidating behavior (HIB) can occur in both the private and public sectors, including colleges and universities. Even individual instances of such behavior can have a significant effect on the person it is aimed at, and can take a physical and emotional toll, reduce the effectiveness of a person's work, and hamper the ability of individuals – and entire units – to do their work. It is a significant reason for unhealthy workplace climate and culture and should be addressed immediately.

Hostile and intimidating behavior can occur both within and across employment sectors – faculty on faculty, faculty on staff, etc. – and power differentials, and in any university setting (the office, the lab, in the halls, at meetings; it can happen in groups or one-on-one). Regardless of when and how it happens, it must be addressed and corrected. Hostile and intimidating behavior is prohibited by university policy.

To learn more about this campus policy and find helpful resources, please consult this University Human Resources page: Hostile and Intimidating Behavior.

Policy on Sexual Misconduct

When sexual misconduct occurs, it degrades the quality of work and education at the University of Wisconsin-Madison. It erodes the dignity and productivity of the individuals involved and diminishes the quality, effectiveness, and stature of the institution. It can occur in any university setting (an office, a classroom, a university program). Each of us has a collective responsibility to act responsibly when confronted by the issue of sexual misconduct, thereby promoting an environment that better supports excellence in teaching, research, and service. You can find the full UW-Madison Policy on sexual misconduct here:

- UW-Madison Policy on Sexual Harassment and Sexual Violence

Parental Leave Policy for Graduate Student Assistants

The College of Engineering (CoE) and the Department is fully committed to providing a climate of support for women and their partners who choose to have children during their graduate studies. The goal of this parental leave policy is to reduce academic and financial hardships for a) female graduate students during the late stages of their pregnancy, childbirth, and postpartum periods, and b) any graduate student who is a new parent providing care for his/her infant.

All CoE graduate students with current research, teaching, or project assistantships are eligible to request

parental leave under this policy. Upon request, expectant mothers will be provided with 12 weeks of paid accommodation time for childbirth. Other new parents (father, adoptive mother, adoptive father) will, upon request, be provided with 6 weeks of paid accommodation time. There will be no research or teaching expectations of the student during the leave.

Students should ideally notify their department (through the Department Administrator or Department Chair) six months prior to the expected birth to request leave. Students should alert their research advisor or TA coordinator at that time as well to ensure that the ongoing research and teaching environment is safe for the expectant mother. It is recognized that each case will be unique in terms of the timing of the pregnancy or adoption relative to the academic calendar, and that creative and supportive solutions will be required on the part of advisors, chairs, TA coordinators, etc.

The leave will ordinarily begin at the time of birth, but other proposals will be considered. Departments – both advisors and chairs – are expected to provide flexibility in working out the details of the leave and to adjust the timeline of the leave as needed to accommodate any unexpected medical issues that arise during pregnancy (e.g., doctor-ordered bed rest).

Expectations Regarding Graduate Students Engaged in Research and their Faculty Advisors

The following is from ISyE Policy 11.3, which applies to graduate students and faculty engaged in research.

Mutual and department expectations

- Advisors and students will carry out their respective responsibilities with the aim of performing research at the level of a world-class university in an honest and ethical manner. Advisors are expected to provide guidance to students on what constitutes honest and ethical research.
- Advisors and students should work together to meet departmental time-to-degree expectations. ISyE Policy 14.1 includes the specific timeline requirements. PhD students should aim to complete their preliminary exam at least one year prior to their final oral defense.
- For PhD students entering in Fall 2019 semester or later, assistantship support will be provided for 5 years for those entering with a bachelor's degree, and 4 years for those entering with an MS degree, provided the student is making satisfactory academic progress according to the ISyE Policy 11.1 and the Graduate School's policies. After this period, an assessment of the student's academic progress will be conducted every semester, following the procedures in ISyE Policy 11.1, section 5. Students can expect their assistantship support to continue as long as they are found to be making adequate progress.

Expectations of faculty advisors

- For a PhD student admitted with a departmental funding guarantee, the advisor commits to provide financial support for the duration of the student's funding guarantee in the form of a research assistantship or teaching assistantship, assuming satisfactory academic progress. The process for determining if a student is meeting satisfactory academic process is described in ISyE P 11.1. Since all research is unique, what constitutes satisfactory progress will necessarily vary by research area and advisor.
- Advisors will provide an intellectual environment that is conducive to research and graduate education at a level consistent with a world-class university. This includes providing an environment that is welcoming to all

students, provides opportunities to learn and conduct research, and is free from hostile and intimidating behavior, bias, harassment, etc.

- Advisors will communicate on a regular basis with students regarding the progress of their research, including praise and constructive criticism as appropriate, always with the aim of educating the student to become a leading researcher in their field. At a minimum, advisors will provide feedback annually via the Graduate Online Assessment and Achievement Learning System, but more frequent feedback is encouraged.
- Advisors will communicate on a regular basis (at least annually) with students regarding their professional development.
- Advisors will clearly communicate, written or verbally, the meeting and working hours expectations they have of students working with them. Assistantship positions do not formally include vacation. However, advisors may allow students working with them some time off and should communicate to their students their expectations for time off.
- Advisors will communicate to students their expectations for supporting students' travel to academic conferences.
- Advisors will recognize students for their contributions to a research program. Typical forms of recognition include authorship/co-authorship of journal and conference publications and reports and supporting students to present research findings at professional meetings and conferences when possible. Advisors should clearly communicate to their students the contributions that are expected in order to be considered a co-author on a publication.
- Advisors will provide the students working with them with the resources required to conduct the research they are being supported to conduct, including a safe and clean working space, necessary equipment, necessary software, etc.
- Advisors shall only instruct graduate students to perform tasks that are directly relevant for their assistantship appointment. Advisors may suggest additional tasks that are directly relevant for the pursuit of the student's degree or professional and career development. Advisors will follow the graduate school policies on RA appointments (https://grad.wisc.edu/documents/research-assistant/
- Advisors recognize that students are allowed to change their faculty advisor and advisors will not hinder the academic progress of a student who changes advisors. An advisor's responsibility to provide financial support for a student end if a student changes to a new advisor. Advisors will not retaliate in any way against students who choose to leave their group.

Expectations of graduate students

- Students will take primary responsibility to inform themselves of and conduct themselves in accordance with the Graduate School's policies and procedures, specific program requirements, and standards of performance established by faculty and articulated in departmental graduate student handbooks. Graduate school academic policies and procedures can be found on their web site: https://grad.wisc.edu/academic-policies/. The program requirements are available in the Guide: https://guide.wisc.edu/graduate/.
- Students will recognize that as graduate students at Wisconsin, their efforts are rewarded both financially through their assistantship position, and educationally through credits earned and their general professional preparation. Accordingly, they will devote an appropriate amount of time and energy toward achieving academic excellence and earning their advanced degree. According to UW-Madison guidelines, a 50% assistantship amounts to an average of 20 hours of work per week. This does not include time spent on courses or tasks related to research credits.
- Students will take responsibility and ownership of their research projects. To complete a PhD, students will demonstrate the ability to independently plan and execute research and disseminate that research in both oral and written forms, including peer-reviewed publications.
- Students with assistantship positions should:
    - expect that coursework and assistantship duties amount to a full-time professional commitment,
    - consult faculty advisors for guidance on course loads that are commensurate with assistantship

responsibilities,
    - complete training and deliverables as required by funding agencies,
    - coordinate, in advance, workload adjustments to accommodate temporary periods of intense coursework activity,
    - and coordinate absences and vacations with their faculty advisors in advance.
- Students will communicate regularly with faculty advisors on matters related to research, academic progress, concerns, and problems they are encountering. Students will complete their self-assessments in the Graduate Online Assessment and Achievement Learning System each year.
- Students will take the initiative to pursue appropriate professional training programs, seminars, mentors, and courses that will enhance their professional development. Before participating in programs or activities with a substantial time commitment, students will consult with their advisor.
- Students are expected to inform the faculty advisor and the department graduate program coordinator of any leaves of absence that may be needed, as well as their date of departure and expected date of return.
- Students will work with faculty to agree prior to submission of scholarly contributions (e.g., papers, abstracts of presentations) upon authorship positions or acknowledgements commensurate with levels of contributions to the work.
- Students are expected to check with their faculty advisor before submitting an abstract to a conference or otherwise making plans for research-related travel.
- Contribute, to the extent possible, to the discourse of the scholarly discipline through presentations, publications, collaborative projects, and other means.
- Graduate students are expected to contribute to a research environment that is inclusive and welcoming to other students and staff. Graduate students are also encouraged and expected to report incidents of hostile or intimidating behavior, bias, harassment, etc. by their advisor, faculty, students, staff, or any person. Such incidents can be reported to the ISyE Associate Chair for Graduate Affairs or the College of Engineering Assistant Dean for Graduate Affairs.

Computing in Industrial & Systems Engineering

UW Madison – Information Technology (DoIT)

DoIT (Division of Information Technology) offers students the following services:

- Advice on software or hardware
- A network connection
- Training
- Help 7 days a week
- Warranties
- Repair and installation
- Software training for students
- Sales advice and competitive prices
- Tech help is free

For more information visit DoIT

Computer-Aided Engineering (CAE)

CAE is a College of Engineering facility available to any student with an engineering major or enrolled in an engineering course, as well as faculty and staff of the College. CAE provides users access to facilities and resources that allow them to effectively compute on the engineering campus. Users have access to a broad range of resources and services which include:

- Windows XP and Linux computer lab access
- Networked file space
- Laser and Color Printers
- Hundreds of software titles
- Email and webpage access
- CAE Consultants in Rm. 172 CAE Building, by phone at 262-5349, or helpdesk@cae.wisc.edu
- Online help
- Access to account management features
- CAE file restoration

For more information go to: Getting Started – Computer-Aided Engineering – UW–Madison (wisc.edu)

Support by Department/Center

In-office computer support for the College of Engineering faculty is provided by your Departmental Support Person (DSP). Services Provided by DSPs:

- Diagnose network problems
- Diagnose computer problems
- Install software and/or upgrades
- Report any problems that cannot be resolved to CAE for further assistance

Useful Links:

- Engineering Media Services (EMS)
- Library Services

Office/Building/Supplies

Building Hours

The Mechanical Engineering Building is open Monday through Friday from 7:00 a.m. to midnight. The building is closed on Saturday, Sunday, and holidays.

Keys

Steps to Obtain a Key for Research Lab

Keys to ISyE research labs are issued to undergraduate and graduate students who have a paid appointment in the ISyE Department. If you need to request a room key, you can do so on KeyLime. After you receive an email confirmation, keys can be picked up in room 3107 ME.

Key Rules

- Do not share this key with others.
- Do not duplicate.

Please return keys "in person" (do not pass on to others).

Steps to Obtain an Access Card to the Mechanical Engineering Building

An access card to the Mechanical Engineering Building can only be issued to a graduate student who has a paid appointment in the ISyE Department and a key to a research lab in the Mechanical Engineering Building. Professors will email the ISyE Administrative Assistant with authorization for a student to be given access to the Mechanical Engineering Building. The student will then be referred to the Department Office to provide their Wiscard for final processing.

Offices and Desk Area

Desk Assignment

Students who are receiving financial support from the ISyE department in the form of a Teaching Assistantship or Research Assistantship will receive office space. For further information, contact the Department Administrator. Please be mindful of your officemates and keep your office area clean and professional.

If you are a teaching assistant and share an office with other graduate students, let them know your office hours and please have them posted at your desk. Some TAs have found it helpful to leave notes at their desk, so if someone is looking, they know where they can find them**. When you graduate or no longer use your desk area, you are required to thoroughly clean your desk!**

Office Supplies

Please see the Main Office Manager (3107) to inquire about office supplies.

Telephones

Student access to university telephone services is limited to internal university and local calls. University-related (research, teaching, extension) long distance calls may be made on the telephone of your advisor with his/her permission. When making a local call including calls to other UW-Madison departments or state agencies, first dial “1” and then dial the seven-digit number.

Mother's Room in Mechanical Engineering

There is a lactation/mother's room in Room 2061 in Mechanical Engineering. To get the code for the key, please visit the Department Office (ME 3107).

Gender Neutral Bathrooms

There is a gender-neutral bathroom in Engineering Hall on the 3rd floor in Room 3118. For a list of bathrooms across campus please view this list: Gender Neutral Bathrooms.

Reflection Room

There are many reflection rooms across campus that promote mental and physical health and well-being by providing a peaceful and quiet place for personal reflection and meditation. The closest reflection room to the Mechanical Engineering Building is in the Wisconsin Union on the third floor.

Mail

Any mail received by a graduate student will be delivered to their faculty advisor. Personal mail should be sent to home addresses.

Mailing Address

[Your Name]
University of Wisconsin
Department of Industrial & Systems Engineering
3170 Mechanical Engineering Building
1513 University Ave.
Madison, WI 53706

Outgoing Mail

Personal mail can be taken to the department office (3107 ME) or to the loading dock on the first floor of the ME building (between ME and ERB). In both places there is a U.S. mail and Campus Mail slot for outgoing mail. The nearest drop box for UPS is on the loading dock.

Photo copying

If you are a graduate student who has an assistantship or is doing research in a lab, you are to use your class ID code or your professor's ID code for the copy machine. The photocopy machine/scanner/fax machine is available in the Copy Room next to the department office in 3107 ME. Photocopying on the department copy machine is NOT permitted for personal purposes, including for courses being taken by the student. When using the copy room, please keep the room clean by throwing out paper scraps, staples, etc. Report user-related problems to the department office. They will call for repairs if necessary.

Copiers for personal use are available in the computer lab in 1263 Mechanical Engineering, or in nearby Union South/Wendt Commons. More information regarding on-campus printing can be found here.

Travel or Purchases for University Business

Before traveling or purchasing supplies for which you expect to be reimbursed or paid directly with university funds, you should meet with Kelly Petersen (kmpetersen2@wisc.edu in ME 3107), the department's Main Office Manager. Due to the complexity and number of rules and regulations, not to mention "illegal" vendors, it is highly recommended that you check with her before you make any arrangements or purchases for the first time. There are many options for payment, and she will be happy to discuss the best choice for you.

Recycling

Recycling is mandatory in Madison. Recyclable containers (aluminum cans, tin/steel, glass, and high-density plastic bottles) should be placed in the waste cans you will see in the hallways. Newspapers should be put in the waste cans labeled "Newspapers." Offices are equipped with wastebaskets for recyclable office paper. See the "UW-Madison Recycling Guide" for more details. Trash cans are emptied once a week. At other times, full containers may be left in the hallway for emptying.

INDEX of WEB RESOURCES

Academic Calendar	https://secfac.wisc.edu/academic-calendar/
Associated Students of Madison	https://www.asm.wisc.edu/
ASM Bus Pass	https://www.asm.wisc.edu/buspass
Badger Support Network	https://www.badgersupportnetwork.org
Bursar's Office	https://www.bursar.wisc.edu
Campus and Visitor Relations	https://info.wisc.edu
Campus Area Housing	https://campusareahousing.wisc.edu
Child Care and Family Resources	https://occfr.wisc.edu/
Code of Conduct	https://www.students.wisc.edu/doso/students/
College of Engineering :	
• Active Learning Classrooms	https://wiscel.wisc.edu/wiscel-centers/coe-active-learning-classrooms/
• Diversity Affairs Office	https://engineering.wisc.edu/about/inclusion-equity-and-diversity/
• Safety	https://safety.engr.wisc.edu
• Student Services	https://www.engineering.wisc.edu/student-services/
Commencement	https://commencement.wisc.edu/
Computer-Aided Engineering	https://www.cae.wisc.edu/
Course Search & Enroll	https://registrar.wisc.edu/course-search-enroll
Dean of Students Office	https://doso.students.wisc.edu
Equity, Diversity & Inclusion at UW-Madison	https://diversity.wisc.edu
Employee Assistance Office	https://employee-assistance-office/
Engineering Career Services	https://ecs.wisc.edu
Engineering Media Services	https://video.engr.wisc.edu
Gender and Sexuality Campus Center	https://lgbt.wisc.edu/
Gender Discrimination – Know your Rights	https://www.equalrights.org/issue/equality-in-schools-universities/sex-stereotypes-discrimination/
Graduate Guide	https://guide.wisc.edu/graduate/
Hostile and Intimidating Behavior	https://hr.wisc.edu/hib/
Information Technology, UW-Madison	https://it.wisc.edu
Innovation Days	https://innovation.wisc.edu/
International Student Services	https://iss.wisc.edu/
ISyE Graduate Programs (Guide)	https://guide.wisc.edu/graduate/industrial-systems-engineering/
ISyE Program Course (Canvas)	https://canvas.wisc.edu/courses/202619
ISyE Dept. Home page	https://www.engineering.wisc.edu/departments/industrial-systems-engineering
Job Center, UW Student	https://jobcenter.wisc.edu/
Key Requests (KeyLime)	https://keylime.engr.wisc.edu/request
Madison Campus and Downtown Apartments	https://cdliving.com
Madison By Season	https://madison.wisc.edu
Madison News	https://madison.com
Makerspace	https://making.engr.wisc.edu
McBurney Disability Resource Center	https://mcburney.wisc.edu
Morgridge Center for Public Service	https://morgridge.wisc.edu/
Multicultural Student Center	https://msc.wisc.edu/

My UW Homepage	https://my.wisc.edu/
New-Student Programs	http://www.newstudent.wisc.edu/
Office of Compliance	https://compliance.wisc.edu
Office of the Registrar	https://www.registrar.wisc.edu/
Office of Student Financial Aid	https://www.finaid.wisc.edu/
Recreation & Wellbeing	https://www.recwell.wisc.edu/
SAFE Nighttime Services	https://transportation.wisc.edu/transportation/safeservices.aspx
Satisfactory Academic Progress (grad school)	https://policy.wisc.edu/library/UW-1218
Software Training for Students	http://www.it.wisc.edu/services/training
Starfish	https://advising.wisc.edu/facstaff/starfish/
Steuber Prize for Excellence in Writing	https://tc.engr.wisc.edu/competitions/entering-the-steuber-prize-for-excellence-in-writing/
Student Affairs	https://students.wisc.edu
Student Health Insurance Plan (SHIP)	https://www.uhs.wisc.edu/ship/
Teaching Assistants' Association	https://taa-madison.org
TEAM Lab	https://teamlab.engr.wisc.edu/
Tenant Resource Center	https://www.tenantresourcecenter.org/
Transfer Student Information	https://www.admissions.wisc.edu/apply/transfer/
Transportation Services	https://transportation.wisc.edu/home.aspx
Travel Policies	https://www.wisconsin.edu/travel/
Tuition and Fees	https://www.registrar.wisc.edu/tuition
Undergraduate Catalog (Guide)	https://guide.wisc.edu/
University Apartments	https://www.housing.wisc.edu/apartments/
University Health Services (UHS)	https://www.uhs.wisc.edu/
UHS Mental Health Resources	https://uhs.wisc.edu/mental-health
University Housing – Apartments	https://www.housing.wisc.edu/apartments
University Libraries	https://www.library.wisc.edu
University Police Department	https://www.uwpd.wisc.edu/
UW KnowledgeBase	https://kb.wisc.edu/
UW – Madison Grad School	https://www.grad.wisc.edu
UW-Madison BOX System	https://uwmadison.account.box.com
UW-Madison Events Calendar	https://today.wisc.edu
UW-Madison Job Center	https://jobcenter.wisc.edu
UW School of Business MBA Program	https://wsb.wisc.edu/programs-degrees/mba
UW Student Organizations	https://win.wisc.edu/organizations
Veteran Services	https://veterans.wisc.edu/
Visit Madison	https://visitmadison.com
WisCard	http://www.wiscard.wisc.edu/
WI Collaboratory for Enhanced Learning (WisCEL)	https://wiscel.wisc.edu
Wisconsin Scholarship Hub (WiSH)	https://wisc.academicworks.com
Wisconsin Union	https://union.wisc.edu/
Writing Center	https://writing.wisc.edu

Department of Industrial and Systems Engineering

UNIVERSITY OF WISCONSIN–MADISON